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Nota di contenuto	PREFACE; CONTENTS; I. CELL MECHANICS; IMAGING AND MECHANICAL PROPERTIES OF GUINEA PIG OUTER HAIR CELLS STUDIED BY ATOMIC FORCE MICROSCOPY; DEVELOPMENT OF A NOVEL MICRO TENSILE TESTER FOR SINGLE ISOLATED CELLS AND ITS APPLICATION TO VISCOELASTIC ANALYSIS OF AORTIC SMOOTH MUSCLE CELLS; SHEAR DEPENDENT ALBUMIN UPTAKE IN CULTURED ENDOTHELIAL CELLS; BIOMECHANICAL AND BIOTRIBOLOGICAL IMPORTANCE OF SURFACE AND SURFACE ZONE IN ARTICULAR CARTILAGE; II. CELL RESPONSE TO MECHANICAL STIMULATION OSTEOBLASTIC MECHANOSENSITIVITY TO LOCALIZED MECHANICAL STIMULUS DEPENDS ON ORIENTATION OF CYTOSKELETAL ACTIN FIBERSMICROBIOMECHANICAL PROPERTIES OF CULTURED ENDOTHELIAL CELLS ESTIMATED BY ATOMIC FORCE MICROSCOPY; EFFECTS OF MECHANICAL STRESSES ON THE MIGRATING BEHAVIOR OF ENDOTHELIAL CELLS; III. TISSUE ENGINEERING; ENGINEERING APPROACHES TO REGULATE CELL DIFFERENTIATION AND TISSUE REGENERATION; A NEW THEORY ON THE LOCALIZATION OF VASCULAR DISEASES; AUTOMORPHOGENESIS OF LOAD BEARING FIBROUS TISSUES: GENERATION OF TENSILE STRESS, CELL ALIGNMENT, AND MATRIX

DEFORMATION BY FIBROBLASTS

IV. COMPUTATIONAL BIOMECHANICS
NOTE ON ANISOTROPIC PROPERTIES OF CANCELLOUS BONE AND TRABECULAE: ELASTICITY AND HARDNESS; APPLICATION OF COMPUTATIONAL BIOMECHANICS TO CLINICAL CARDIOVASCULAR MEDICINE; BIOMECHANICAL STUDY FOR SKELETAL MUSCLE INJURY AND A VIEW OF MICRO-BIOMECHANICS FOR MICROSTRUCTURE OF MUSCLE; MECHANICAL BEHAVIOR AND STRUCTURAL CHANGES OF CELLS SUBJECTED TO MECHANICAL STIMULI: DEFORMATION, FREEZING, AND SHOCK WAVES; SUBJECT INDEX; A; B; C; D; E; F; G; H; I; K; L; M; N; O; P; Q; R; S; T; U; V; W; Y

Sommario/riassunto

This book is essential reading for those interested in understanding current trends of research in the area of biomechanics at micro- and nanoscale levels. It details the research carried out to date in this field by fourteen prominent researchers as part of a four-year government supported project which commenced in 2003.
